

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method for producing an arborescent polymer comprising the steps of:
 - a. ~~Epoxidizing~~ epoxidizing a first polymer, wherein the first polymer is a polydiene, with an epoxidizing agent such that epoxide groups are chemically bonded to the first polymer at one or more sites; and,
 - b. grafting a second polymer onto the epoxidized first polymer such that chemical bonds are formed between the first and second polymers so that the bond is formed at the epoxide groups,
wherein the second polymer includes at least one reactive group groups capable of forming bonds with the epoxide groups, and wherein the second polymer is a living polymer and the at least one reactive group is anionic reactive group.
2. (Original) The method of claim 1 wherein the first polymer and the second polymer are either a homopolymer or a copolymer, and is either linear, branched or dendritic.
3. (Original) The method of claim 1 wherein the epoxidizing agent is a peroxy compound.
4. (Original) The method of claim 1 wherein the second polymer includes a single reactive group.
5. (Original) The method of claim 1 wherein the reactive groups are located at a terminal position on the second polymer.

6. (Original) The method of claim 1 wherein a cycle defined by steps a) and b) is repeated at least once, and wherein the polymer formed at b) of the preceding cycle is the substrate for the epoxidation reaction at a) in the subsequent cycle.
7. (Original) The method of claim 1 wherein the reaction between the first polymer and the second polymer, a promoter is utilized.
8. (Currently amended) The method of claim 7 wherein the promoter prevents the neutralization of the anionic charge of the anionic reactive group on the second polymer.
9. (Original) The method of claim 7 wherein the promoter is selected from the group consisting of a metal ion, a Lewis base, and a Lewis acid.
10. (Original) The method of claim 9 wherein the metal ion is a lithium ion.
11. (Original) The method of claim 10 wherein the metal ion is provided from a lithium salt.
12. (Original) The method of claim 11 wherein the lithium salt is selected from the group consisting of lithium chloride, and lithium bromide.
13. (Original) The method of claim 1 wherein the first polymer is selected from the group consisting of polyisoprene, and polybutadiene.
14. (Original) The method according to claim 1 wherein the second polymer is selected from the group consisting of polyisoprene, polystyrene, and substituted polystyrenes.
15. (Cancelled)